DEPLOYMENT MADE EASY!

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DSFederal Inc.

- We provide solutions to Federal Agencies
- Our technology solutions connect customers to the people they serve

Necessity is the Mother of Invention

- Project Requirements
  - Budget
  - Team Size
  - Time
- Need for Standardized Deployments
- Workflow with CI/CD
- Onboarding Developers
  - Classic local development
  - Virtual Machine

Classic Dev Environment

Problems?

- Host OS Support; tedious configurations
- Non-transferable
- Deployment Hassle

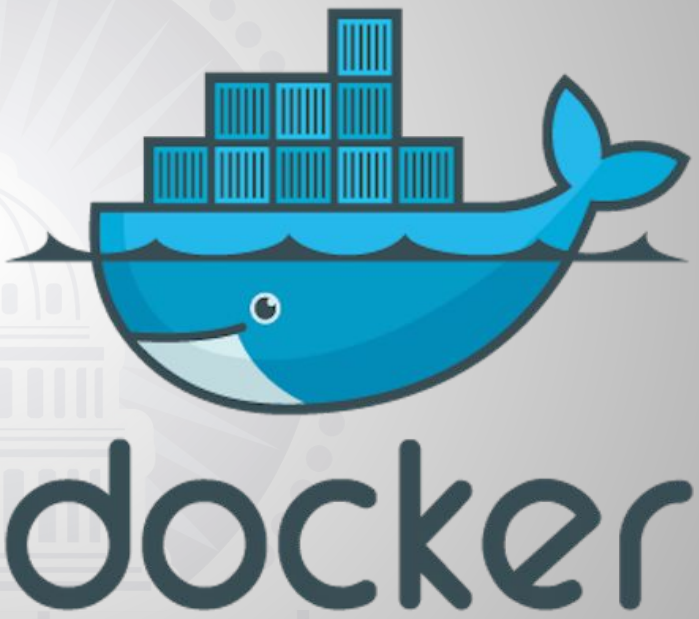
Virtual Machines

- Pros
  - Pristine host; highly customizable
  - Multiple VMs, 1 per project
  - Clone, share and transfer to other hosts
- Cons
  - Resource heavy
  - Difficult to share images

Docker to the Rescue

Docker

Docker is an open platform for developers and sysadmins to build, ship, and run distributed applications, whether on laptops, data center VMs, or the cloud.



Why Docker?

- Lightweight
- Portable
- Consistent Environment

Docker Containers

- Docker container wrap up a piece of software in a complete filesystem that contains everything it needs to run: code, runtime, system tools, system libraries – anything you can install on a server
- A container is a runtime instance of an image

Docker Images

- Docker container runs an Image
- Binary package with root filesystem and metadata
- Metadata includes:
  - Application Process
  - Volumes
  - Ports, etc.

Compose Docker Image

- Images are built from DockerFile
- DockerFile is sequential list of commands
- Images can inherit from other images

Example: php:5.6-fpm inherits from debian:jessie

DockerFile example

```
#Docker file 1 (Installing apache on an
Ubuntu 12 image )
FROM ubuntu:12.04

RUN apt-get update && apt-get install -y
apache2 && apt-get clean && rm -rf
/var/lib/apt/lists/*

ENV APACHE_RUN_USER www-data
ENV APACHE_RUN_GROUP www-data
ENV APACHE_LOG_DIR /var/log/apache2

EXPOSE 80
CMD ["/usr/sbin/apache2", "-D",
"FOREGROUND"]
```

```
#Docker File 2 (Here we don't care about the OS)
FROM php:7.2-apache

WORKDIR /var/www/html
EXPOSE 80
```

Lets Setup Local

- Dockerfile for Applications
- Compose File
- Environment Variables
- Volumes
- Git Branches

Amazon Web Services

- Provides secured hosting service
- Scalable
- Complies with Fed. Govt. and is FEDRAMP Certified
- Pay as you go
- Great set of tools

Setup AWS EC2 Instance

- Create AWS Account
- Configure EC2 Instance
- Setup SSH Access
- Install Docker & Docker Compose

Setup Nginx

- Organize domains
- Redirect incoming requests

for eg.,

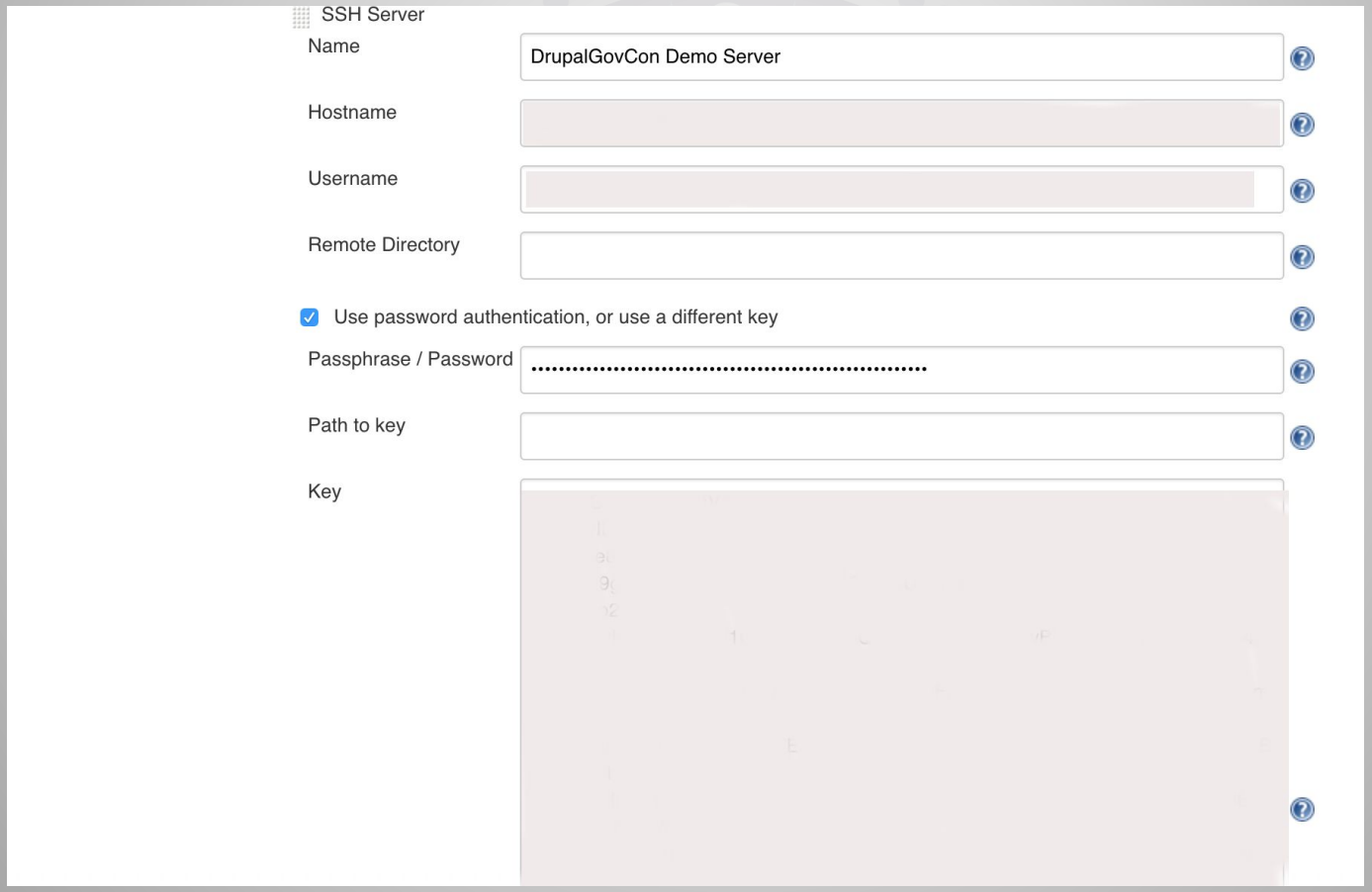
govcondev.dsfederal.com ⇒ 127.0.0.1:10080

govconstg.dsfederal.com ⇒ 127.0.0.1:10081

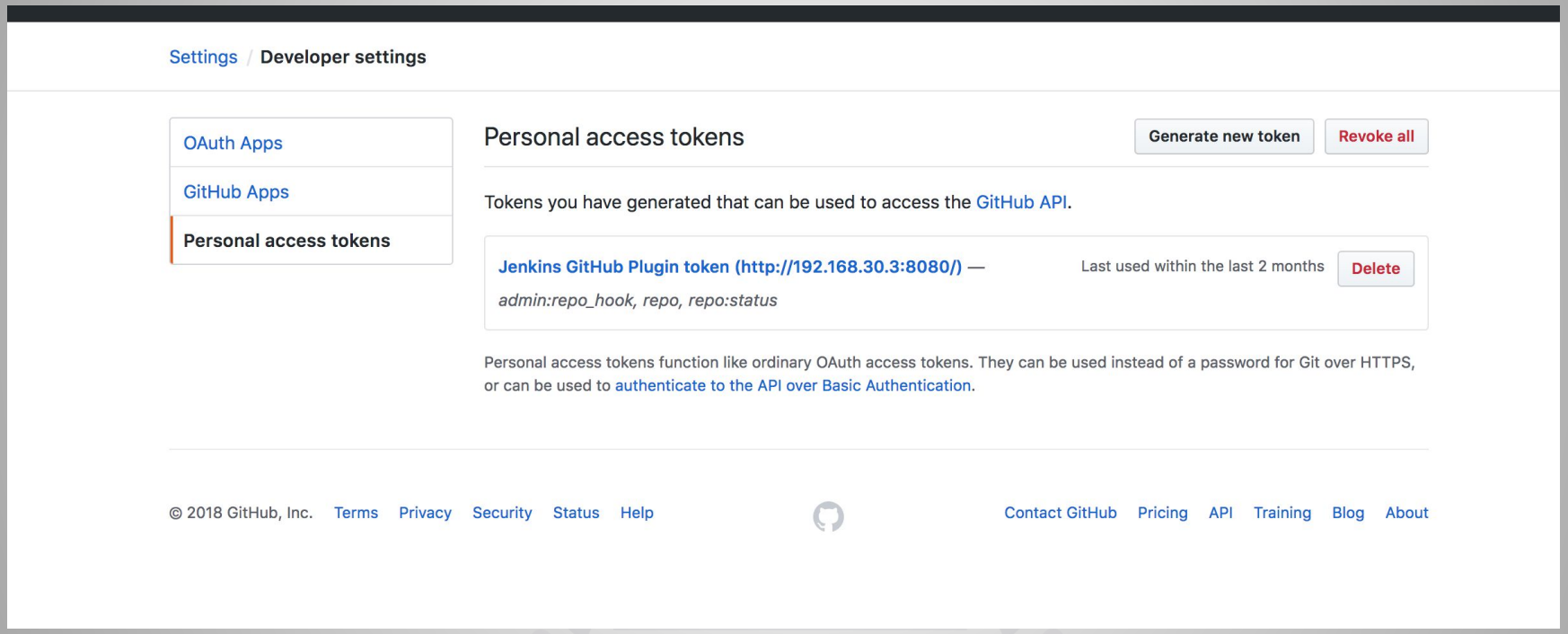
CI Jenkins

- Automation Server
- Makes deployment easier
- Works great with EC2, github, etc.
- For our purposes we will use plugins:
  - Github Plugin
  - Publish Over SSH

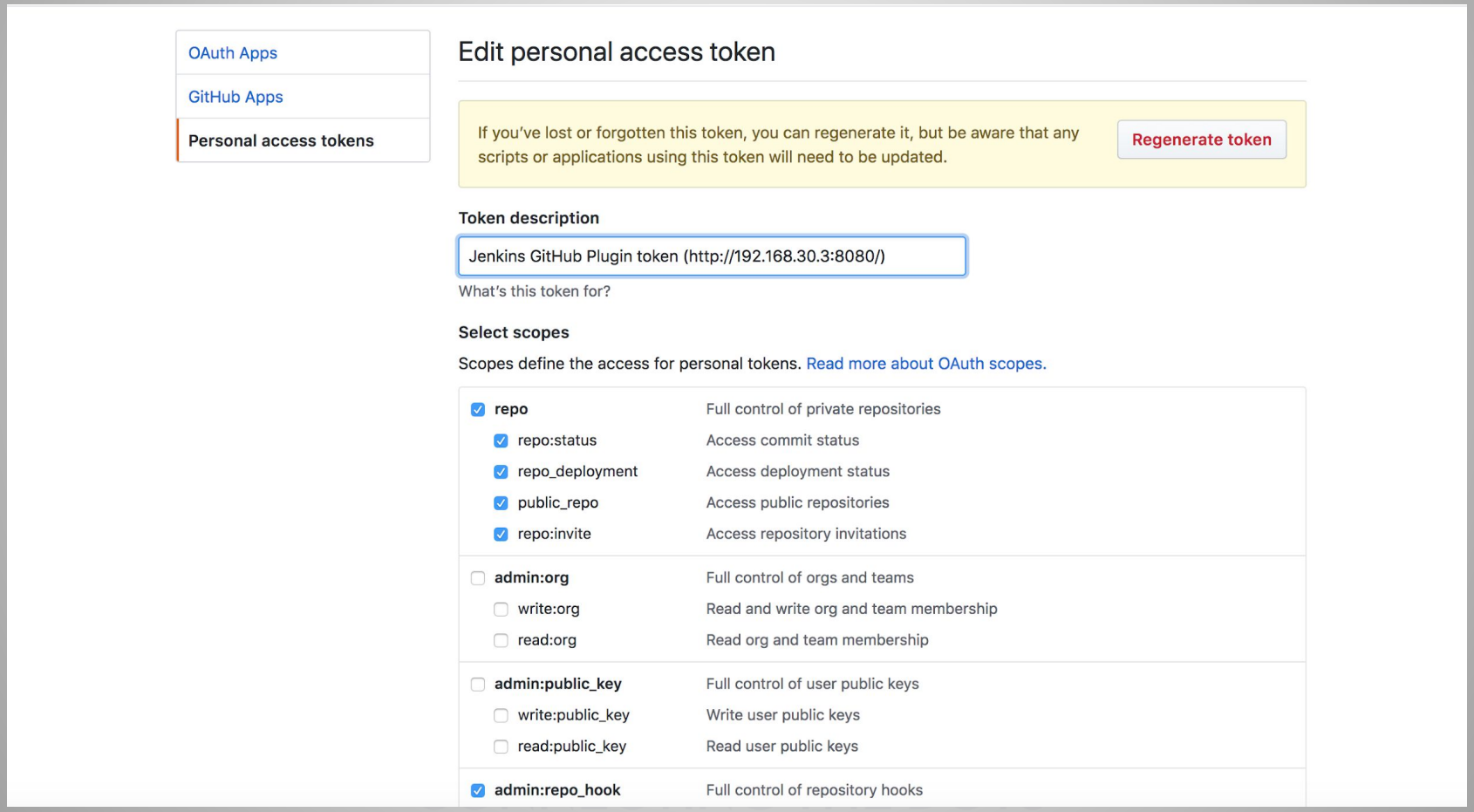
SSH Server


SSH Server
Name
DrupalGovCon Demo Server
Hostname
Username
Remote Directory
Use password authentication, or use a different key
Passphrase / Password
Path to key
Key

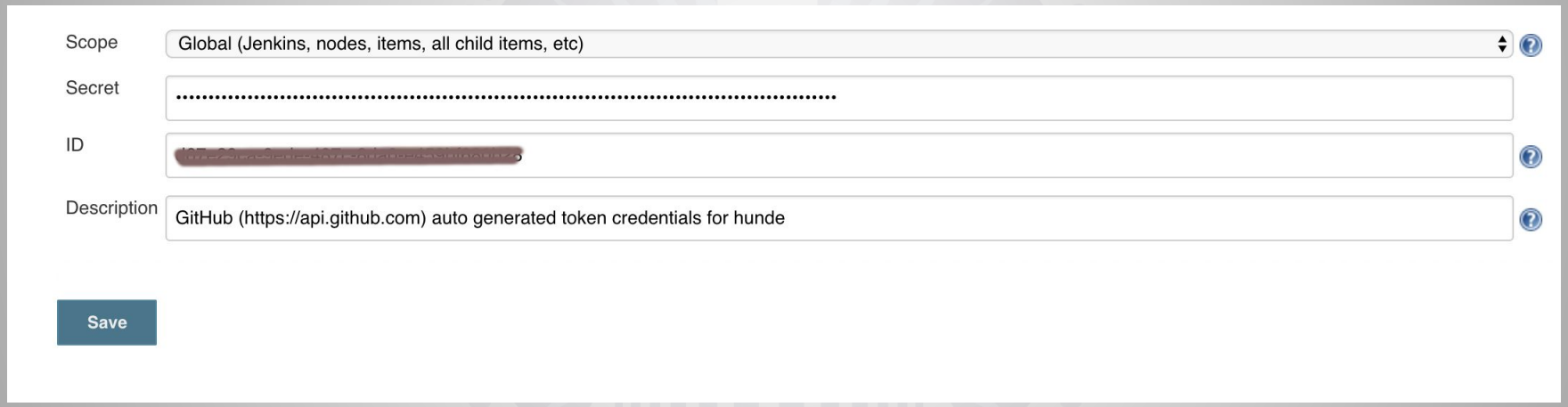
Github Personal Token



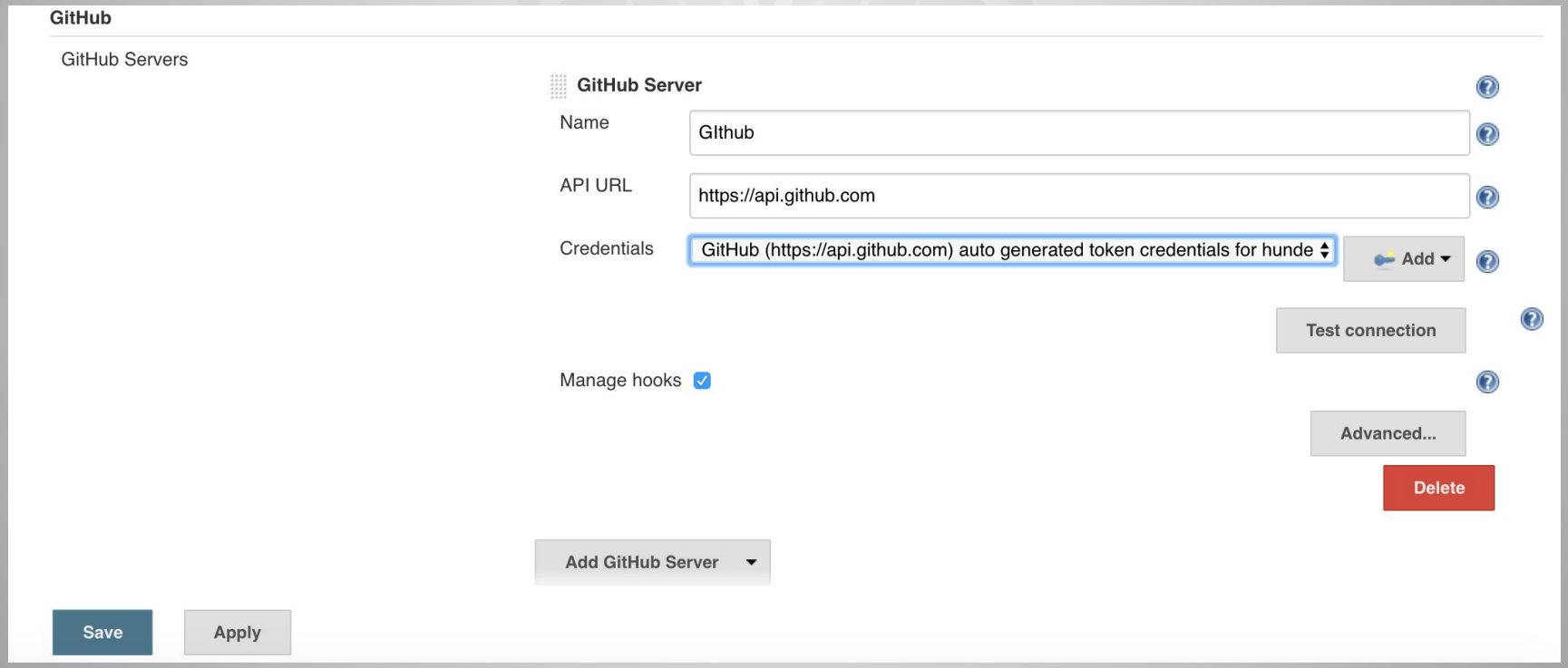
Token Access



Github Credentials in Jenkins

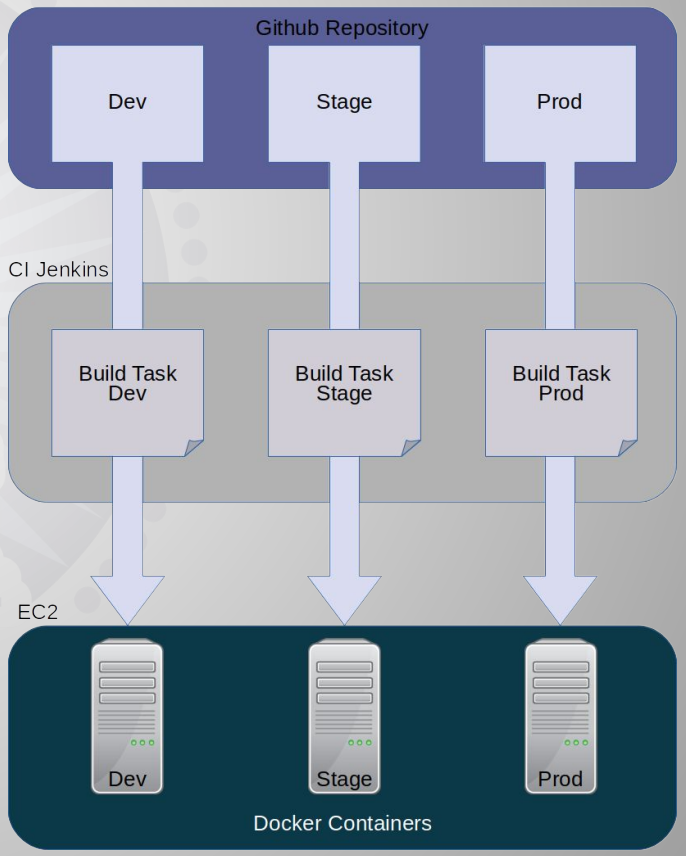


Github Connection

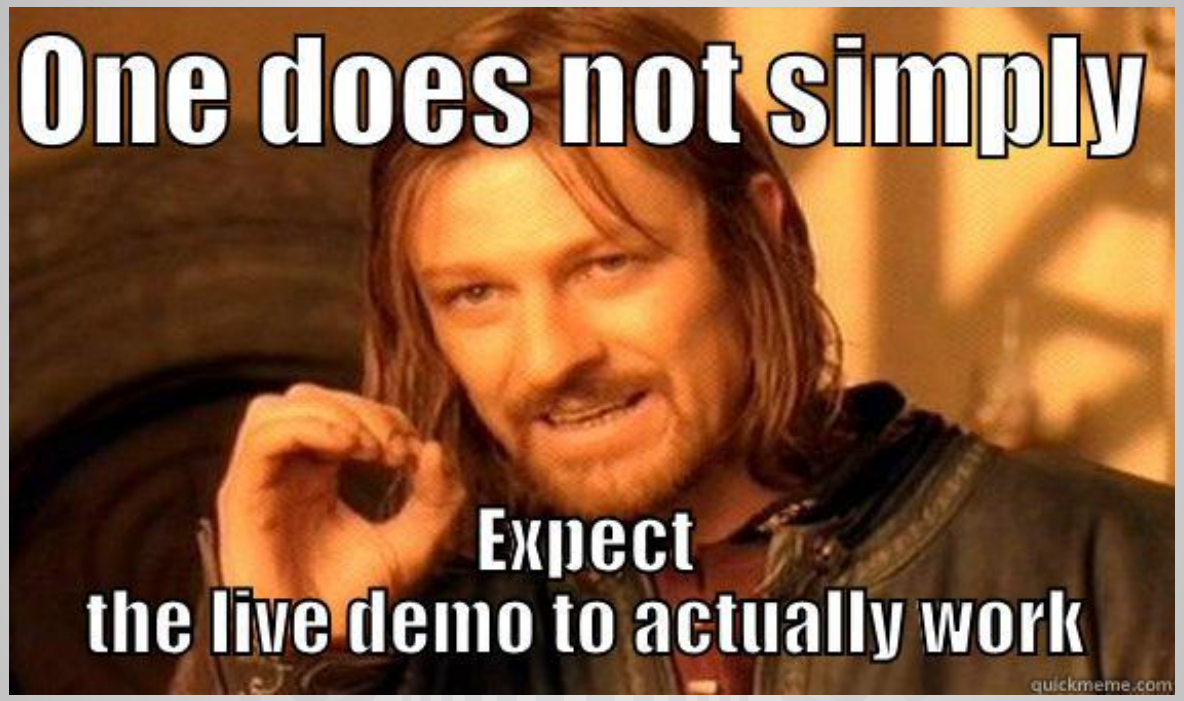


Jenkins Build Tasks

- Build tasks for each path
- Git Polling triggers individual tasks
- Task Definition:
  - DrupalGovConDev
  - DrupalGovConStage
  - DrupalGovConProd



Demo



https://youtu.be/qZalwRMcQk0

https://youtu.be/GHTRZyfXc2M

QUESTIONS?

https://github.com/DSFederalInc/Drupal4GovCon

Demo:

https://youtu.be/qZalwRMcQk0

https://youtu.be/GHTRZyfXc2M

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THANK YOU